REMARKS

The applicants appreciate the careful examination the Examiner has given
to this application and believe the claims as amended will satisfy the Examiner's
concerns.

The Examiner is advised that claims in this application have been
amended coherently with the corresponding Canadian application, which is currently
under examination, and taking into account the prior art cited in both the United States
and Canadian applications.

With regard to Section 2 of the Action, claims 2-4, 6, 7, 9, and 12-15 have
been amended to overcome the Examiner's objections as being indefinite.

With regard to Section 4 of the Action, the Examiner has rejected claims
6 and 7 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to
particularly point out and distinctly claim the subject matter which applicant regards as
the invention.

Claims 6 and 7 have been amended by introducing additional limitations
to better define the invention.

With regard to Section 6 of the Action, the Examiner has rejected claims
1-3, 5-7, 10, 11, and 14-16 under 35 U.S.C. 102 (b) as being anticipated by Fichou,
U.S. patent No. 5,909,443 ["Fichou"].

Claim 1 has been amended by introducing additional limitations to better
define the invention and to further differentiate from the prior art.

The method, of the amended claim 1, provides cascaded policing of
multiple traffic classes within a service that enables a traffic class of service
differentiation within the service. The differentiation within a service provides traffic
class with a lower priority the opportunity to be transmitted on the left over capacity
for a higher priority traffic class. This is a two-tier rate guarantee mechanism that
provides each class of service its own respective rate guarantee and the service as a

whole also given a rate guarantee, which is equal to the sum of the individual rate guarantee.

For the service rate guarantee paid for by the client for a service having multiple traffic classes, the method in the amended claim 1 allows the lower priority traffic to benefit from otherwise unused capacity allocated to the higher priority traffic, as a result, the overall service delivery to the client being improved.

In contrast, Fichou (U.S. patent No. 5,909,443), [column 2 <<lines 34-61>>] and [column 2 <<line 62>> to column 3 <<line>18>>] teaches a method for optimum allocation of connections bandwidth in the ATM network which carries CBR traffic, VBR traffic, and ABR traffic. The VBR connection set up requires a parameter, which the VBR source and the network must negotiate. During periods of reduced traffic activity, the ABR traffic class makes optimum use of unused network bandwidth. The ABR source and the network also negotiate the minimum amount of connection bandwidth that will always be available to the ABR traffic source. Fichou's technique is used to manage the CBR, VBR, and ABR traffic classes in the ATM network, which benefits the network provider and it does not manage client's service having multiple traffic classes for the benefits of improving the delivery of service to the client.

Claims 2-4, 10, and 14 depend on the amended claim 1 and have additional limitations to better define the invention.

Claim 5 has been amended by introducing additional limitations to better define the invention and to further differentiate from the prior art.

Claims 6, 7, 11, and 15 depend on the amended claim 5 and have additional limitations to better define the invention.

Claim 16 is a system claim having a scope similar to the amended claim 1.

It is respectfully submitted that the anticipation rejection of the Examiner in view of Fichou has been traversed.

With regard to Section 19 of the Action, the Examiner has rejected claims 4 and 17 under 35 U.S.C. 103 (a) as being unpatentable over Fichou, in view of Bonomi.

Fichou (U.S. patent No. 5,909,443) and Bonomi (U.S. patent No. 5,864,540) combined do not teach the method of the amended claim 1 and do not provide differentiation within a service such that traffic class with a lower priority has the opportunity to be transmitted on the left over capacity of a higher priority traffic

5   class for enhancing the service delivery for a client's service having multiple traffic classes.

In the present invention, the service rate guarantee depends on the quality of service (QoS) given to a client's service with multiple classes of services. Within the service rate guarantee paid for by the client, the method in the amended claim 1

10   allows the lower priority traffic to benefit from otherwise unused capacity allocated to the higher priority traffic, as a result, the service delivery to the client being improved.

Claim 4 depends on the amended claim 1 and has additional limitations to better define the invention.

Claim 17 is a system claim having a scope similar to the amended claim

15   1.

It is respectfully submitted that the obviousness rejection of the Examiner in view of Fichou (U.S. patent No. 5,909,443) and Bonomi (U.S. patent No. 5,864,540) combined has been traversed.

20   With regard to Section 24 of the Action, the Examiner has rejected claims 8 and 9 under 35 U.S.C. 103 (a) as being unpatentable over Fichou (U.S. patent No. 5,909,443).

Claim 8 has been amended by introducing additional limitations to better define the invention and to further differentiate from the prior art.

25   For the service rate guarantee paid for by the client for a service having multiple traffic classes, the method in the amended claim 8 allows the lower priority traffic, C_1, C_2, - -, C_{i-1}, to benefit from otherwise unused capacity allocated to the higher priority traffic C_i, as a result, the overall service delivery to the client being improved.

30   Claim 9 depends on the amended claim 8.

It is respectfully submitted that the anticipation rejection of claims 8 and 9 of the Examiner in view of Fichou has been traversed.

With regard to Section 27 of the Action, the Examiner has rejected claims

12 and 13 under 35 U.S.C. 103 (a) as being unpatentable over Fichou, in view of Pillar

et al, U.S. Patent No. 6,438,106 ["Pillar"].

Claims 12 and 13 have been amended by introducing additional

5   limitations to better define the invention and to further differentiate from the prior art.

Accordingly, Fichou and Pillar combined do not anticipate the features of
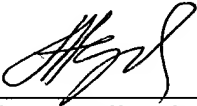
the amended claims 12 and 13.

The Examiner is requested to respectfully reconsider this application with

10   regard to the amendments to the claims presented above and the above arguments with

a view to considering the claims favorably for allowance.

The Commissioner is hereby authorized to deduct any prescribed fees for

these amendments from our Company's **Deposit Account No. 501832**.

15

Yours truly,
Sudhakar Ganti

20

By:_____
Victoria Donnelly, Ph.D.
Patent Agent
Reg. No. 44,185

25

TROPIC NETWORKS INC.,
Intellectual Property Department
135 Michael Cowpland Drive
Kanata, Ontario, Canada.
30   K2M 2E9

Telephone: (613) 270-6026
FAX: (613) 270-9663
E-mail: Victoria.Donnelly@tropicnetworks.com

35

CERTIFICATE OF MAILING

I hereby certify that this paper (26 pages) is being sent by FEDEX Courier

service in a package having a tracking No. 7915 1751 2938   to the following address:

U.S. Patent and Trademark Office
220 20th Street South

5   Customer Window, Mail Stop: Non-Fee Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Telephone: 703-308-0906

10

15   Omayma E. Moharram, Ph.D., P.Eng.
Patent Engineer,
TROPIC NETWORKS INC.,
Intellectual Property Department
135 Michael Cowpland Drive

20   Kanata, Ontario, Canada.
K2M 2E9

Telephone: (613) 270-6942
FAX: (613) 270-9663

25   E-mail: Omayma.Moharram@tropicnetworks.com

AMENDMENTS TO THE CLAIMS

1. (currently amended)   A method of <u>cascaded</u> policing packet traffic comprising

5   <u>the steps of</u>: ~~policing packets of a first class in accordance with at least one policing~~

~~parameter associated with the first class; policing packets of a second class in accordance~~

~~with at least one policing parameter associated with the second class in a manner which~~

~~gives to the second class at least a portion of a traffic throughput afforded to the first~~

~~class by at least one of said at least one policing parameter associated with the first class~~

10   ~~of traffic which is not being used by the packets of the first class.~~

     (a)   <u>policing a service at a service rate guarantee, the service having a first</u>

         <u>class traffic capacity having a first class rate guarantee and a second</u>

         <u>class traffic capacity having a second class rate guarantee, which is</u>

         <u>lower than the first class rate guarantee, the service rate guarantee</u>

15   <u>being equal to the sum of the first class rate guarantee and the second</u>

         <u>class rate guarantee;</u>

     (b)   <u>policing the first class traffic capacity at the first class rate guarantee;</u>

     (c)   <u>if not all of the first class traffic capacity is being used, transmitting a</u>

         <u>portion of the second class traffic capacity on the left over capacity of</u>

20   <u>the first class, the portion being less or equal to the second class traffic</u>

         <u>capacity; and</u>

     (d)   <u>policing the remaining portion of the second class traffic capacity,</u>

         <u>which is not being policed on the left over capacity of the first class, at</u>

         <u>an aggregate rate of the first class rate guarantee and the second class</u>

25   <u>rate guarantee.</u>

2. (currently amended)   ~~A~~ <u>The</u> method according to claim 1<u>,</u> wherein the ~~at least~~

~~one policing parameter associated with the first class comprises a first class rate~~

30   ~~guarantee, and wherein the at least one of said at least one policing parameter associated~~

~~with the first class of traffic is said first class rate guarantee~~ <u>first class traffic capacity being marked as conforming if allowed by the first class rate guarantee and non-conforming if found to exceed the first class rate guarantee.</u>

5   3. (currently amended)   ~~A~~ <u>The</u> method according to claim 1<u>,</u> wherein the ~~at least one policing parameter associated with the first class comprises a rate guarantee and a burst tolerance, and wherein the at least one of said at least one policing parameter associated with the first class of traffic comprises both the rate guarantee and the burst tolerance~~ <u>second class traffic capacity being marked as conforming if allowed by the</u>

10   <u>aggregate rate of the first class rate guarantee and the second class rate guarantee and non-conforming if found to exceed the aggregate rate of the first class rate guarantee and the second class rate guarantee.</u>

       4. (currently amended)   ~~A~~ <u>The</u> method according to claim 1<u>,</u> wherein the ~~at least~~

15   ~~one policing parameter associated with the second class comprises a second class rate guarantee, wherein: the first class of traffic is policed in accordance with the first class rate guarantee, with traffic being either marked as conforming if allowed by the rate guarantee and non-conforming if found to exceed the first class rate guarantee; the second class of traffic is policed such that conforming first class traffic plus second class~~

20   ~~traffic does not exceed the first class rate guarantee plus the second class rate guarantee~~ <u>steps (b) and (d) comprise policing at the traffic class rate guarantee and a traffic class burst tolerance guarantee.</u>

       5. (currently amended)   A method ~~of cascaded~~ <u>of cascaded</u> policing <u>packet</u> traffic

25   comprising <u>the steps of</u>: ~~defining a traffic class rate guarantee for each of a plurality of traffic classes to be provided by a service, and a service rate guarantee for the service; policing combined traffic containing traffic of each of the plurality of traffic classes in a manner which guarantees each class its respective traffic class rate guarantee, and in a manner which guarantees the service rate guarantee for the combined traffic.~~

(e)   policing a service at a service rate guarantee, the service having a plurality of traffic capacities having a respective plurality of traffic classes rate guarantees arranged in a descending order of priorities, the service rate guarantee being equal to the sum of the plurality of traffic classes rate guarantees;

(f)   policing at least one of the plurality of traffic capacities at its respective traffic class rate guarantee;

(g)   if not all of the at least one of the plurality of traffic capacities is being used, transmitting arespective portions of the plurality of traffic capacities, which have lower traffic classes rate guarantees, on the left over capacity of said at least one of the plurality of traffic capacities, the portion being less or equal to the sum of the plurality of traffic capacities; and

(h)   policing each of the remaining portions of said plurality of traffic capacities, which have lower traffic classes rate guarantees and have not being policed on the left over capacity of the at least one of the plurality of traffic capacities, at an aggregate rate of the plurality of traffic classes rate guarantees.

6. (currently amended)   A-The method according to claim 5, further comprising: for each of the plurality of traffic classes, policing a respective combined traffic class comprising that traffic class plus all conforming higher class traffic, the policing being done at a rate equal to the traffic class rate guarantee for that traffic class plus the traffic class rate guarantees for at least one higher class of traffic wherein the at least one of the plurality of traffic capacities is marked as conforming if allowed by its respective traffic class rate guarantee and non-conforming if found to exceed its respective traffic class rate guarantee.

7. (currently amended)   A-The method according to claim 6-5, further comprising:

~~policing each traffic class such that the respective combined flow of that traffic class plus all conforming higher-class traffic is done at a rate equal to the traffic class rate guarantee plus the traffic class rate guarantees for all higher classes of traffic~~ <u>wherein each of the remaining portions of the plurality of traffic capacit-ies is marked as conforming if</u>

5   <u>allowed by the aggregate rate of the plurality of traffic classes rate guarantees and non-conforming if found to exceed the aggregate rate of the plurality of traffic classes rate guarantees.</u>

8. (currently amended)   A method of <u>cascaded</u> policing <u>packet traffic</u> ~~a plurality N~~

10   ~~of traffic classes Ci, each having a respective rate guarantee Ri, i=1,. . . , N, N>=2 the method~~ comprising <u>the steps of:</u> ~~policing traffic of class C1 according to rate R1; for each other class Ci, policing traffic of class Ci plus conforming traffic of class(es) C1,. . . , Ci-1 according to an aggregate rate RAi =~~ $\sum_{i=1}^{N} Ri$ ~~.~~

15   (i)   <u>policing a service at a service rate guarantee, the service having a plurality of N -traffic capacities, C_i, i=1, 2, - -, N and N>2, having a respective plurality of traffic classes rate guarantees, R_i, i=1, 2, - -, N and N>2 arranged in a descending order of priorities, the service rate guarantee being equal to</u> $\sum_{i=1}^{N} R_i$ <u>-;</u>

20   (j)   <u>policing the C_i traffic capacity at its respective traffic class rate guarantee R_i;</u>

    (k)   <u>if not all of the C_i traffic capacity is being used, transmitting a portion of the $C_1, C_2, - -, C_{i-1}$ traffic capacities on the left over capacity of the C_i traffic capacity, the portion being less or equal</u>

25   <u>to</u> $\sum_{i=1}^{N} C_i$ <u>; and</u>

(l)   policing each of the remaining traffic capacities $C_1, C_2, --, C_{i-1}$, which is not in step (k), at an aggregate rate RA_i, which is

$$RA_i = \sum_{i=1}^{N} R_i.$$

5

9. (currently amended)   ~~A~~ The method according to claim 8, ~~wherein each traffic class Ci has a respective burst tolerance BTi, the method~~ further comprising the steps of: ~~policing traffic of class C1 according to BT1; for each other class Ci, policing traffic of class Ci plus conforming traffic of class(es) C1, . . . , Ci-1 according to an~~

10   ~~aggregate burst tolerance BAi = $\sum_{i=1}^{N} BTi$.~~

(m)   policing a service at a service burst tolerance guarantee, the service having a plurality of N traffic capacities, C_i, i=1, 2, - -, N and N>2, having a respective plurality of burst tolerance guarantees, BT_i, i=1,2, - -, N and N>2;

15   (n)   policing the C_i traffic capacity at its respective burst tolerance guarantee BT_i;

(p)   if not all of the C_i traffic capacity is being used, transmitting a portion of the $C_1, C_2, --, C_{i-1}$, traffic capacit-ies on the left over capacity of the C_i traffic capacity, the portion being less or equal to $\sum_{i=1}^{N} C_i$; and

20   (q)   policing each of the remaining traffic capacities $C_1, C_2, --, C_{i-1}$, which is not in step (p), at an aggregate burst tolerance guarantee BA_i, which is $BA_i = \sum_{i=1}^{N} BT_i.$

9a (new)   The method as described in claim 8, wherein each of the C_i, i = 1, 2, - -, N

and N>2, traffic capacities being marked as conforming if allowed by its

respective traffic class rate guarantee R_i, i=1, 2, - -, N and N>2 and non-

conforming if found to exceed its respective traffic class rate guarantee, R_i,

i=1, 2, - -, N and N>2.

9b. (new)   The method as described in claim 8, wherein each of the C_1, C_2, - -, C_{i-1},

traffic capacities being marked as conforming if allowed by the aggregate

rate RA_i, which is - $RA_i = \sum\limits_{i=1}^{N} Ri$ and non-conforming if found to exceed the

aggregate rate RA_i which is $RA_i = \sum\limits_{i=1}^{N} Ri$.

10. (currently amended)   A policer performing the steps of the method as described

in ~~adapted to implement a method according to~~ claim 1.

11. (currently amended)   A policer performing the steps of the method as described

in ~~adapted to implement a method according to~~ claim 5.

12. (currently amended)   A policer performing the steps of the method as described

in claim 8 ~~according to claim 10 implemented as an application specific integrated~~

~~circuit~~.

13. (currently amended)   ~~A~~ The policer according to claim ~~11~~ 12 implemented as

software running on a processor ~~an application specific integrated circuit~~.

14. (currently amended)   ~~A~~ The policer according to claim 10 implemented as

software running on a processor.

15. (currently amended)   A-The policer according to claim 11 implemented as software running on a processor.

5   16. (currently amended)   A processing platform readable medium having stored thereon processing platform executable instructions which when executed: ~~police packets of a first class in accordance with at least one policing parameter associated with the first class; police packets of a second class in accordance with at least one policing parameter associated with the second class in a manner which gives to the second class at least a~~

10   ~~portion of a traffic throughput afforded to the first class by at least one of said at least one policing parameter associated with the first class of traffic which is not being used by the packets of the first class.~~

(v)   police a service at a service rate guarantee, the service having a first class traffic capacity having a first class rate guarantee and a second

15   class traffic capacity having a second class rate guarantee which is lower than the first class rate guarantee, the service rate guarantee being equal to the sum of the first class rate guarantee and the second class rate guarantee;

(w)   police the first class traffic capacity at the first class rate guarantee;

20   (x)   if not all of the first class traffic capacity is being used, transmit a portion of the second class traffic capacity on the left over capacity of the first class, the portion being less or equal to the second class traffic capacity; and

(y)   police the remaining portion of the second class traffic capacity, which

25   is not being policed on the left over capacity of the first class, at an aggregate rate of the first class rate guarantee and the second class rate guarantee.

30   17. (currently amended)   An apparatus for cascaded policing packet traffic

comprising: ~~an input for receiving packets of multiple different classes of a single service including a first class and a second class; a policer adapted to police packets of the first class in accordance with at least one policing parameter associated with the first class; the policer being further adapted to police packets of the second class in accordance with at~~

5   ~~least one policing parameter associated with the second class in a manner which gives to the second class at least a portion of a traffic throughput afforded to the first class by at least one of said at least one policing parameter associated with the first class of traffic which is not being used by the packets of the first class; the policer being adapted to mark each packet as being conforming or non-conforming.~~

10   (r)   a policer, policing a service at a service rate guarantee, the service having a first class traffic capacity having a first class rate guarantee and a second class traffic capacity having a second class rate guarantee which is lower than the first class rate guarantee, the service rate guarantee being equal to the sum of the first class rate guarantee and

15   the second class rate guarantee;

(s)   a policer, policing the first class traffic capacity at the first class rate guarantee;

(t)   a transmitter, transmitting a portion of the second class traffic capacity on the left over capacity of the first class, if not all of the first class

20   traffic capacity is being used, the portion being less or equal to the second class traffic capacity; and

(u)   a policer, policing the remaining portion of the second class traffic capacity, which is not being policed on the left over capacity of the first class, at an aggregate rate of the first class rate guarantee and the

25   second class rate guarantee.

18. (new)   The apparatus as described in claim 17, wherein the policer comprises means for marking the first traffic capacity as conforming if allowed by the first class rate guarantee and non-conforming if found to exceed the first

30   class rate guarantee.

19. (new)   The apparatus as described in claim 17, wherein the policer comprises

means for marking the second traffic capacity as conforming if allowed by

aggregate rate of the first class rate guarantee and the second class rate

5   guarantee and non-conforming if found to exceed the aggregate rate of the

first class rate guarantee and the second class rate guarantee.